AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A gas flow controller for gas burners comprising:

a main valve being operable by means of a diaphragm that delimits ~~a~~ first and second gas ~~chamber~~ chambers; and

a three-way valve means connected via gas pipes to the first gas chamber, ~~a~~ the second gas chamber in the inlet area of the main valve and a third gas chamber in the outlet area of the main valve, the three-way valve means being operated by an actuator and adapted to control gas flow for applying pressure to the diaphragm for actuating the main valve.

2. (Original) A gas flow controller according to claim 1, wherein the three-way valve means is configured and arranged to selectively connect the first gas chamber to either the second gas chamber or the third gas chamber.

3. (Original) A gas flow controller according to claim 1, further comprising:

spring means adapted to load the main valve into its closed position.

4. (Original) A gas flow controller according to claim 1, wherein the main valve is arranged to be opened when there is a negative pressure in the first gas chamber vis-à-vis the second gas chamber.

5. (Original) A gas flow controller according to claim 1, wherein the cross-sectional and flow resistance in gas pipes and through the three-way valve means are configured to achieve at least one of: a selected opening and closing speed of the main valve.

6. (Original) A gas flow controller according to claim 1, wherein the cross-sectional and flow resistance in the gas pipes and in the three-way valve means are configured to achieve a modulation of the opening cross section of the main valve.

7. (Original) A gas flow controller according to claim 6, wherein the cross-sectional and flow resistance of the gas pipe that connects the three-way valve means to the second gas chamber and the respective inlet area of the three-way valve means are configured to achieve a selected modulation of the opening cross section of the main valve.

8. (Original) A gas flow controller according to claim 1, wherein the three-way valve means is a three-way valve.

9. (Original) A gas flow controller according to claim 1, wherein the three-way valve means includes a combination of two-way valves.

10. (Original) A gas flow controller comprising:

inlet, outlet and auxiliary chambers;

a main valve coupled between the inlet and outlet chambers and to a diaphragm separating the inlet chamber from the auxiliary chamber, the main valve being controllable in response to movement of the diaphragm; and

a three-way control valve coupled to the inlet, outlet and auxiliary chambers and configured and arranged to control movement of the main valve by controlling differential pressure across the diaphragm.

11. (Original) The gas flow controller of claim 10, wherein the three-way control valve is adapted to couple the inlet chamber to the auxiliary chamber to reduce a pressure differential across the diaphragm.

12. (Original) The gas flow controller of claim 10, wherein the three-way control valve is adapted to couple a relatively higher pressure in the inlet chamber to the auxiliary chamber to increase pressure applied by gas in the auxiliary chamber to the diaphragm and close the main valve.

13. (Original) The gas flow controller of claim 10, wherein the three-way control valve is adapted to close a connection between the auxiliary chamber and the inlet chamber to create a pressure differential between the inlet chamber and the auxiliary chamber such that gas pressure on the diaphragm from the inlet chamber opens the main valve.

14. (Original) The gas flow controller of claim 10, wherein the three-way control valve is adapted to selectively couple the inlet chamber to the outlet and auxiliary chambers.

15. (Original) The gas flow controller of claim 14, wherein the three-way control valve is adapted to couple the inlet chamber to the auxiliary chamber to close the main valve and to couple the inlet chamber to the outlet chamber to open the main valve

16. (Original) A gas burner supply valve comprising:

first, second and third gas chambers, the first and second gas chambers being separated by a diaphragm, the first and third gas chambers being separated by a main valve coupled to the diaphragm, the main valve being configured and arranged for actuating in response to movement of the diaphragm caused by a differential pressure across the diaphragm; and

a three-way servo valve connected via gas pipes to the first, second and third gas chambers and configured and arranged for controlling the differential pressure across the diaphragm to control the actuation of the main valve by selectively coupling the first, second and third gas chambers.

17. (New) A gas flow controller according to claim 1, wherein the main valve includes a valve head configured and arranged for positioning relative to a valve seat, the main valve being closed when the valve head is in contact with the valve seat and being opened when the valve head is not in contact with the valve seat, and wherein the diaphragm is coupled directly to the valve head and configured and arranged to pull the valve head away from the valve seat, thereby opening the main valve, in response to the pressure in the first gas chamber being less than the pressure in the second gas chamber.

18. (New) A gas flow controller according to claim 3, wherein the diaphragm is configured and arranged to apply additional force to the spring means in a direction away from the main valve in response to the pressure in the first gas chamber being reduced.

19. (New) A gas flow controller according to claim 10, wherein the main valve includes a valve head and a valve seat, an opening between the inlet and outlet chambers being closeable in response to the valve head contacting the valve seat, further comprising a spring configured and arranged to apply force against the valve head, in a direction towards the valve seat, the diaphragm configured and arranged to apply pressure to counter the force of the spring in direct response to pressure in the inlet chamber.

20. (New) A gas burner supply valve according to claim 16, wherein the diaphragm is configured and arranged to open the main valve by deflecting, in response to an increase in pressure on a side of the diaphragm adjacent to the main valve and in direct contact with the first chamber, in a direction away from the side of the diaphragm adjacent to the main valve.